

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A measurement system comprising:

at least one stationary array of sensors at a first location to produce a first array of measurement outputs which are each associated with a sensor in the array;

at least one scanning sensor at a second location to produce a second array of measurement outputs which are all associated with one or more sensors of the scanning sensor; and

means for synthesizing an array of measurement outputs by fusing the first and second arrays of measurement outputs.
2. (Original) The measurement system of claim 1, wherein the stationary and scanning measurements are compared and reconciled so that the measurements made by a plurality of sensors are attributed to the same point on material that is being measured.
3. (Original) The measurement system of claim 1, wherein the measurements comprise time stamp information, cross direction coordinates, machine direction coordinates, and at least one of machine direction odometer or velocity information.

4. (Original) The measurement system of claim 1, wherein the synthetic measurement is provided by computing an offset using a recursive least mean square algorithm.

5. (Original) The measurement system of claim 4, wherein the recursive least mean square algorithm is a Kalman filter.

6. (Original) The measurement system of claim 5, wherein the Kalman filter output data is used to compensate for different sensor inputs and bias errors.

7. (Original) The measurement system of claim 5, wherein the Kalman data is used to compensate for the temporal variations in the biases of an array of stationary sensors.

8. (Original) The measurement system of claim 1, wherein data measurements from stationary and scanning sensors are compared by a Kalman filter and an offset compensation for the sensor measurement drift is calculated.

9. (Currently Amended) A method for fusing data measurements obtained from plural locations in a product manufacturing process comprising:

measuring a variable of at least one of the product properties and the process with at least one stationary sensor at a first location in the manufacturing process to produce a first output;

measuring the variable of at least one of the product properties and the process
with a scanning, non-stationary sensor at a second location in the manufacturing process
to produce a second output; and
producing a synthetic measurement by fusing the first and second outputs.

10. (Original) The method of claim 9, wherein the stationary and scanning
measurements are compared and reconciled so that the measurements made by a plurality of
sensors are attributed to the same spot on material that is being measured.

11. (Original) The method of claim 10, wherein the measurements comprise
time stamp information, cross direction coordinates, machine direction coordinates, and at
least one of machine direction odometer or velocity information.

12. (Original) The method of claim 9, wherein the synthetic measurement is
provided using an offset computed by a recursive algorithm.

13. (Original) The method of claim 12, wherein the recursive algorithm is a
Kalman filter.

14. (Original) The method of claim 13, wherein the Kalman filter uses different
sensor inputs and computes bias errors.

15. (Original) The method of claim 13, wherein the Kalman filter computes the temporal variations in the biases of an array of stationary sensors.

16. (Original) The method of claim 9, wherein data measurements from stationary and scanning sensors are compared by a Kalman filter and an offset compensation for the sensor measurement drift is calculated.